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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,283	08/31/2006	Andre Burghardt	294926US0PCT	9403
22850	7590	10/23/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			USELDING, JOHN E	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			10/23/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/591,283	<b>Applicant(s)</b> BURGHARDT ET AL.	
	<b>Examiner</b> JOHN USELDING	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haberle et al. (DE 10000656) in view of Horodysky (5,160,507). US 2003/0088030 is being used as an English language equivalent for DE 10000656 since it is a part of the patent family.

Regarding claim 18: Haberle et al. teach carbodiimide derivate that contains a carbodiimide group and a carbamic ester group.

What Haberle et al. fails to teach is a thiocarbamic ester group (-HN-CO-S-) in their carbodiimide derivative. Instead they teach a carbamic ester group (-HN-CO-O-). The difference being that the applicants substituted sulfur for oxygen in the ester. Horodysky et al. teach the principle that sulfur ester moieties possess significantly improved thermal and oxidative stability properties when compared to their non-sulfur ester containing analogs (column 1, lines 43-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute sulfur for the oxygen in the carbodiimide derivative of Haberle et al. to make a carbodiimide derivative with improved thermal and oxidative

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stability. The applicant has made allegations to unexpected results. Those being and improved peel strength and thermal stability. These are not unexpected since one of ordinary skill in the art would expect an increase in thermal stability, and hence peel strength under increased temperature, when a sulfur ester was used instead of a non-sulfur ester.

Regarding claims 19-21: They teach that the carbodiimide derivative may contain hydrophilic groups that are polyalkylene oxide groups (paragraphs 0067-0078 and claim 5).

Regarding claims 22-23: The carbodiimide derivates are made from isocyanates (paragraph 0022) and carboxylic acids (paragraph 0029). The carbodiimides are derived from 4-20 carbon polyisocyanates (paragraph 0022).

Regarding claim 24-26: Haberle et al. teach 80-1200mmol/kg of hydrophilic groups based on all of the monomers (paragraph 0077). It is obvious to optimize the amount of hydrophilic groups based on the carbodiimide derivative.

Regarding claim 27: Haberle et al. teach using their carbodiimide as a crosslinker (0175, 0180, 0182).

Regarding claim 28: Haberle et al. teach that their carbodiimides are a part of stabilized polymer dispersions (0016).

Regarding claims 29 and 35: Haberle et al. teach an aqueous polymer dispersion comprising a carbodiimide derivative to polymer weight ratio of from 0.005:1 to 1:1 (paragraph 0059). It is obvious to select the overlapping portion of the ranges.

Regarding claims 30-32: They teach using polyurethane as the polymer (paragraph 0081), and that their polymer contains carboxylic acid groups (paragraph 0092). The method of making the polyurethane is a product by process limitation. Process limitations in product claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "In re Thorpe , 227 USPQ 964, 966 (Fed. Cir. 1985). Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433. See also *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

Regarding claim 33: Haberle et al. also teach coating a workpiece with their dispersion and then contacting the workpiece with another workpiece to adhere the substrates (paragraph 0122).

Regarding claim 34: Haberle et al. teach providing a substrate with a dried film of their adhesive and then heating the substrates (0123).

Regarding claims 36-38: Haberle et al. teach coating their adhesive on substrates (0122).

Regarding claim 39: Haberle et al. teach impregnating a substrate with their polymer dispersion (0120).

### ***Response to Arguments***

Applicant's arguments filed 8/27/2008 have been fully considered but they are not persuasive.

The applicant has made the argument that Haberle and Hardysky are from two very diverse art fields. The fact that sulfur ester moieties are more thermally stable than non-sulfur ester moieties is not something that is limited to any particular art but is a part of general chemistry knowledge. One of ordinary skill in the art would consider any sulfur ester, no matter what field of chemistry, to be more thermally stable than a non-sulfur ester. Haberle et al. are concerned with thermal stability (0124) and peel strength (0176), which is measured at thermally elevated temperatures, and therefore would be motivated to substitute the oxygen with a sulfur atom. The Office retracts the statement that the chalcogens are functionally equivalent because the prior art relied upon shows that they are not.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN USELDING whose telephone number is (571)270-5463. The examiner can normally be reached on Monday-Thursday 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Uselding  
Examiner  
Art Unit 1796

/Marc S. Zimmer/  
Primary Examiner, Art Unit 1796